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AUTHOR Abel, Frederick J.; And Others
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ABSTRACT

Practically every teacher preparation institution offers a course in educational psychology, and it is often the initial education course taken by preservice teachers. Problems with such courses are that they are usually taught by several instructors with no standardization of course content, and the strategies used to teach these courses often do not model the theories covered. This paper describes an attempt at Montana State University to resolve and respond to these problems. A search for a solution led to a five-step training process described by Joyce and Showers (1980). In addition, education faculty involved in teacher education and students who had taken the course were surveyed to determine what they considered to be important. As a result of this survey, eight important components were identified: behavioral, cognitive, developmental, and humanistic psychology; learning styles; brain research; exceptional children; and multicultural education. In order to standardize this material, an instructional analysis, based on instructional design theory, was developed for each component. This process can be applied to other courses in the teacher education program. (Author)

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THE APPLICATION OF INSTRUCTIONAL DESIGN AND MODELING THEORY IN EDUCATIONAL PSYCHOLOGY

By

Dr. Frederick J. Abel
Assistant Professor
Montana State University

Dr. Dennis Ausel
Assistant Professor
Indiana State University of Pennsylvania

Dr. Ervin F. Sparapani
Director of Student Teaching
Saginaw Valley State College

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INTRODUCTION

Practically every teacher preparation institution offers a course in educational psychology and it is often the initial education course taken by pre-service teachers. Since educational psychology introduces teacher candidates to a variety of psychological theories and principles as they apply to the teaching-learning process, educational psychology is generally considered an important component of the teacher education sequence (Clinefelter, 1979).

According to Bail (1983), teachers of educational psychology courses are doing two things rather well. One is teaching cognitive mastery of the theory; the other is providing positive affective and clinical experiences which attempt to link theory to practice. Although the teachers of these courses are to be commended on these achievements, several other problems exist. Of these problems, we will concentrate on two in this paper. One has to do with the methods and strategies used to deliver the instruction in the educational psychology classroom; the other has to do with a lack of standarization of course content. Both problems will be discussed in more detail below, and we will report how we attempted to resolve and respond to the problems at Montana State University.

PROBLEM ONE: METHODS AND STRATEGIES

The adage, "teachers tend to teach the way they were taught and not the way they were taught to teach," is an opinion held by

many psychologists and teacher educators. It appears, however, that these same psychologists and teacher educators seldom "practice" what they "preach". That is, the teachers of courses such as educational psychology (where practicing what is preached would appear to be especially important) usually lecture about a theory. Generally, students sit and listen. In some cases, students may attempt to analyze how theories and principles are applied by observing interactions in K-12 classrooms. The student, however, sees only one method for delivering the instruction and, therefore, only one instructional strategy. Therein lies the problem.

Cohen (1984) suggests a possible solution. She recommends the application of personal causation theory ("a motivational construct that describes the experiences persons have when they are initiating, in control of, and responsible for their own actions." p. 214) to help educational psychology students understand their own motivations, and to model techniques for motivation. This is an excellent proposal but falls short of the mark because it concentrates on modeling only one theory. We propose, therefore, that if we want our future teachers to use a variety of teaching techniques and strategies as well as provide for motivation, we need to begin by modeling a variety of instructional strategies and methods, and that these strategies and methods be derived from the theories covered in the educational psychology classroom. In other words, all students intending to be teachers need not only to learn about educational theories, but need to experience the application of such theories.

SOLUTION TO METHODS AND STRATEGIES

Our search for a solution led us to a five step training process described by Joyce and Showers (1980). Modeling is the second step in that process. Modeling theory is well-documented in many areas. Glover (1978) asserts that health educators are models for learners, and if they are going to be effective educators they must be consciously aware of their modeling roles. Koran and Koran (1981) and Rezba and Andersen (1976) found that modeling was an effective strategy for helping preservice science teachers acquire a variety of teaching strategies prior to microteaching simulations. Ivancevich and Smith (1981) found that business managers who watched videotapes of interview techniques and then role played the techniques were better interviewers in "real" situations than business managers who sat through a lecture explaining interviewing techniques and then role played. Similarly, Hirsch and Stone (1982) found that viewing videotapes and role playing were effective strategies for developing counseling skills. In addition, Zimmerman and Ghozeil (1974) and Hunter (1984) claim that modeling is a very effective teaching strategy because modeling serves as an example or pattern in the teaching-learning process. Further, Bandura (1977, p. 42) documents that modeling serves as a highly effective means of establishing abstract or rule-governed behavior. Finally, Tyson (1982, p. 192) affirms that in the education of preservice teachers we need to focus upon developing the ability to generate a wide variety of teaching strategies.

PROBLEM TWO: LACK OF STANDARD INFORMATION

A second problem is that often several instructors teach the same basic educational psychology courses which results in as many interpretations and emphases as instructors (Welch, 1975). The instructors who teach the courses often do it in isolation, seldom discussing content or strategy, and such courses often seem to be particularly devoid of what might be considered "good" teaching. Most educational psychology instructors do little to model the theories they teach. A situation that flies in the face of modeling theory and what teacher educators say teachers are supposed to do.

We found this to be the case in our instance. As a result of teaching in isolation, content and strategy depended upon the particular expertise and interests of the instructor. Therefore, content in our situation varied considerably and the predominant teaching strategy was lecture with some discussion. In effect, we were not practicing what we were preaching.

SOLUTION TO LACK OF STANDARD INFORMATION

Because we were not modeling the theories, and the lack of standarization, we decided to collaborate in order to model alternative delivery methods and strategies, and to standardize the course content. To help us achieve these goals, we applied the instructional systems design process outlined by Briggs (1977) and Kemp (1985).

In order to complete such a project, we wrote a grant which was funded by the Teaching/Learning Committee at Montana State University. Our original proposal included the preparation of eight instructional modules to be completed by June 1985. We now hope to have six modules completed and ready for large group evaluation by the Fall Quarter, 1985.

THE INSTRUCTIONAL DESIGN PROCESS

The instructional design approach we employed entailed three distinct stages: the define stage, the development stage, and the evaluation stage. The modeling strategy we used was the social learning theory of observational learning described by Bandura (1969; 1977).

To begin the process the education faculty who would be directly involved with our students in the future and students at Montana State University who had already taken the course were surveyed in order to determine what they felt was important to include in such a course. As a result of this survey and our own professional judgement, we identified eight topics. These were: behavioral, cognitive, developmental, and humanistic psychology; learning styles; brain research; exceptional children; multicultural education.

Our initial discussions revolved around how each of us approached these topics, what was similar about what each of us did, and how we might standardize the information. In addition, we discussed strategies and methods for presenting the information once it was standardized. We felt that lecture was

an unsuitable approach in many cases and, therefore, unsatisfactory, especially in an educational psychology course. It was agreed that the methods used to present information in such a course should be as important as the information itself. Consequently, our purpose was to design the course so that it would not only contain similar information and incorporate sound instructional design principles, but also model the various theories. In keeping with modeling theory, our intent was to have students view the various theories in action as well as experience the learning process described by the theories.

As part of the define stage (completed Autumn Quarter, 1984) an instructional analysis was completed for each topic (see figures 1 and 2 for examples of an instructional analysis). During Winter and Spring Quarters, 1985, we used the instructional analyses to help design our instruction for our educational psychology courses. Reactions by students have been extremely positive. All students appreciated the opportunity to observe the theories being modeled, experience the theories, and the logical sequence of each component.

SOME EXAMPLES OF INSTRUCTIONAL METHODS AND STRATEGIES

In the learning styles unit (see figure 1 for the instructional analysis developed for this unit) we utilize McCarthy's 4-MAT System (McCarthy, 1980). Students are rotated through the System while they "learn" about learning styles and develop a learning styles inventory based on Dunn and Dunn (Dunn and Dunn, 1978).

The cognitive psychology unit (see figure 2 for the instructional analysis developed for this unit) consists of the students again experiencing the 4-MAT System while learning the theories of Jerome Bruner and David Ausubel. To teach the cognitive psychology unit, we apply the Concept Attainment and Advance Organizer Models described by Joyce and Weil (Joyce and Weil, 1980). In this instance, the Concept Attainment Model is used to help students understand the advance organizer theory.

The behavioral psychology unit is currently being programmed in a self-taught module on microcomputers. This program will incorporate many of the basic behaviorist concepts such as mastery, behavioral objectives, immediate reinforcement, etc.

At the completion of each unit, a debriefing session is held to discuss the instructional strategies employed in the unit and how they fit the particular theories studied. This has developed into an extremely important part of our overall strategy.

CONCLUSION

One of the main goals of this project is for instructors to model alternative instructional strategies. While we realize that modeling alone will probably not result in any significant change at the in-service teacher level, we feel that it fulfills the first two steps (presentation and modeling) of the five step coaching sequence described by Joyce and Showers (1980). This approach has been found effective for moving teachers to adopt new instructional strategies. Steps three through five in the Joyce and Showers sequence (practice in simulated classroom

settings; structured and open ended feedback; and coaching for application) will be dealt with during the required para-professional field experience and as part of student teaching.

We believe that the process we followed for the redesign of this educational psychology course can and should be used with other courses in the teacher perparation program. In addition, there are many other courses in the university which could benifit from the process of instructional systems design.

References

Abel, F. J. (1985, April). Coaching: The key to successful implementation of models of teaching. Paper presented at the annual meeting of the American Association of Colleges for Teacher Education, Denver, CO.

Bail, F. T. (1983). An integrated model for teaching educational psychology to pre-service teachers. Teaching of Psychology, 10, 155-159.

Bandura, A. (1969). Principles of behavior modification. New York: Holt, Rinehart and Winston.

Bandura, A. (1977). Social learning theory. Englewood Cliffs, NJ: Prentice-Hall.

Briggs, L. J. (Ed.). (1977). Instructional design: Principles and applications. Englewood Cliffs, NJ: Educational Technology Publications.

Cohen, M. W. (1984). Enhancing motivation in educational psychology. Teaching of Psychology, 11, 214-217.

Dunn, R. S. & Dunn, K. J. (1978). Teaching students through their individual learning styles: A practical approach. Reston, VA: Reston Publishing.

Glover, E. D. (1978). Modeling: A powerful change agent. The Journal of School Health, 48, 175-176.

Hirsch, P. A. & Stone, G. L. Attitudes and behavior in counseling skill development. Journal of Counseling Psychology, 29, 516-522.

Hunter, M. (1984). Knowing, teaching and supervising. In P. L. Hasford (Ed.), Using what we know about teaching (pp. 169-192). Alexandria, VA: Association for Supervision and Curriculum Development.

Ivansevich, J. M. & Smith, S. V. (1981). Goal setting interview skills training: Simulated and on-the-job analyses. Journal of Applied Psychology, 66, 697-705.

Joyce, B. R. & Showers, B. (1980). Improving inservice training: The message of research. Educational Leadership, 37, 379-385.

Joyce, B. R. & Weil, M. (1980). Models of teaching (3rd ed.). Englewood Cliffs, NJ: Prentice-Hall.

Kemp, J. E. (1985). The instructional design process. New York: Harper and Row.

Koran, J. J. & Koran, M. L. (1981). The effects of teacher anxiety and modeling on the acquisition of a science teaching skill and concomitant student performance. Journal of Research in Science Teaching, 18, 301-370.

McCarthy, B. (1980). The 4MAT system: Teaching to learning styles with right-left mode techniques. Oak Brook, IL: Excel.

Rezba, R. J. & Andersen, H. O. (1976). Effects of modeling on preservice science teachers during ISCS microteaching sessions. Journal of Research in Science Teaching, 13, 13-18.

Tyson, J. C. (1982). Instructional theory. Contemporary Education, 53, 190-192.

Zimmerman, B. J. & Ghozeil, F. S. (1974). Modeling as a teaching technique. Elementary School Journal, 74, 440-446.

Instructional Analysis

FIGURE 1

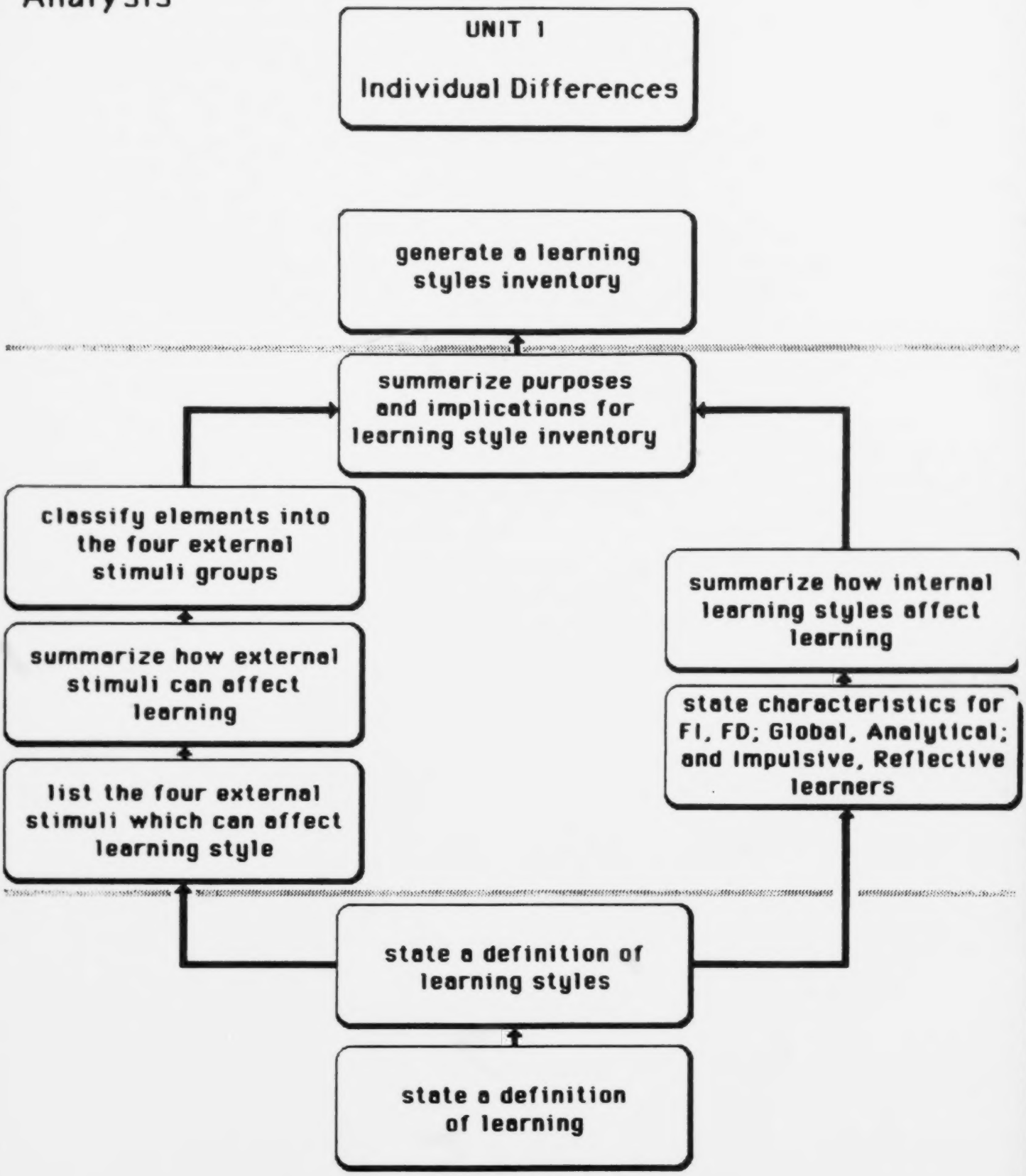
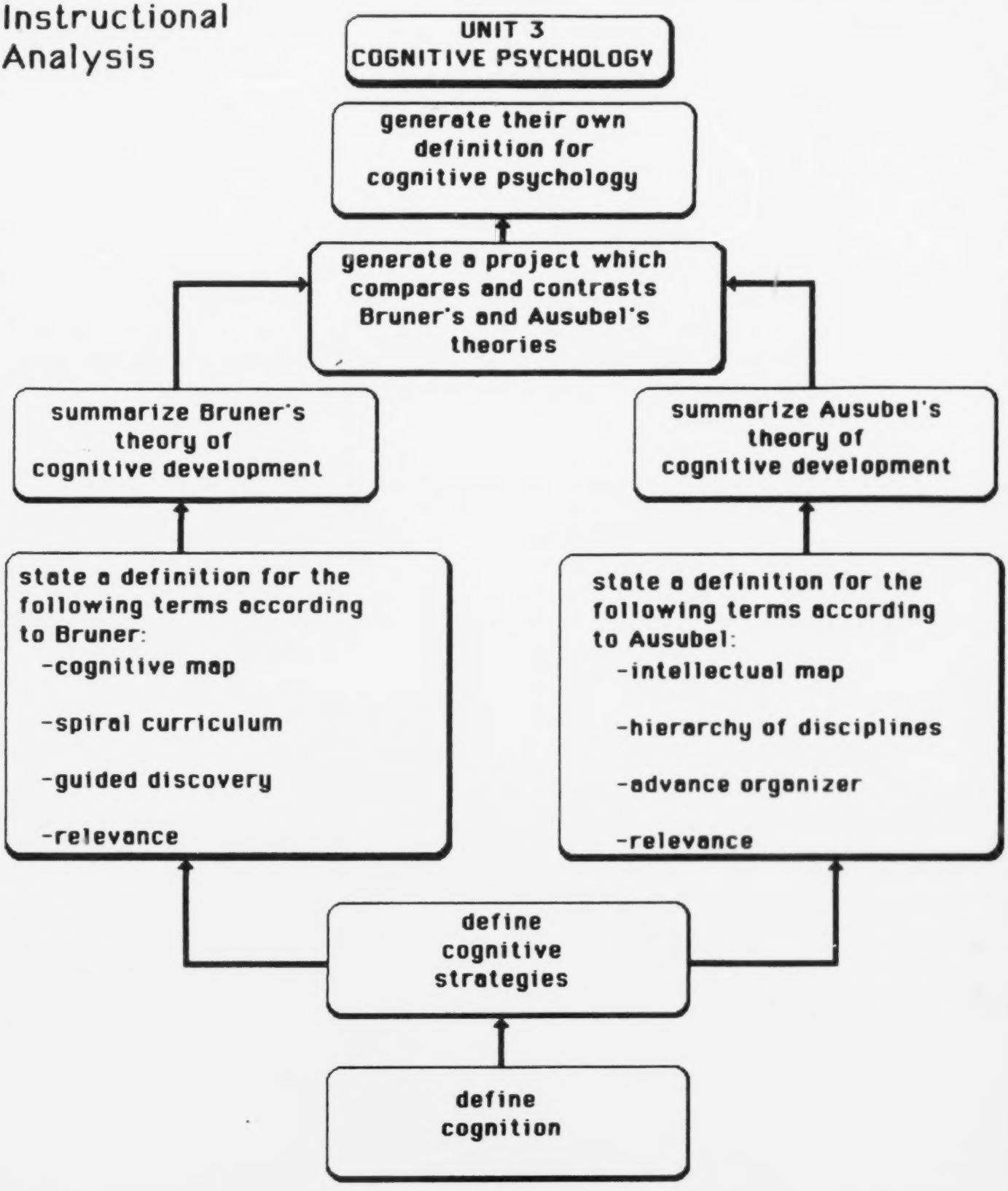

UNIT 1
Individual Differences
generate a learning styles inventory
summarize purposes and implications for learning style inventory
classify elements into the four external stimuli groups
summarize how external stimuli can affect learning
list the four external stimuli which can affect learning style
summarize how internal learning styles affect learning
state characteristics for FI, FD; Global, Analytical; and Impulsive, Reflective learners
state a definition of learning styles
state a definition of learning

figure 2

Instructional Analysis


UNIT 3
COGNITIVE PSYCHOLOGY
generate their own definition for cognitive psychology
generate a project which compares and contrasts Bruner's and Ausubel's theories
summarize Bruner's theory of cognitive development
summarize Ausubel's theory of cognitive development
state a definition for the following terms according to Bruner:
-cognitive map
-spiral curriculum
-guided discovery
-relevance
state a definition for the following terms according to Ausubel:
-intellectual map
-hierarchy of disciplines
-advance organizer
-relevance
define cognitive strategies
define cognition